

## Danville Health Disparities Profile Index

The Virginia Department of Health, Office of Health Equity (VDH-OHE) created the Danville Health Disparities Profile Index (Danville Index) to identify factors impacting “Students who graduate with a regular diploma 4 years after starting 9<sup>th</sup> grade” at George Washington High School and Langston Focus High School in Danville, Virginia. The findings conclude that Danville has one of the lowest on-time, four-year graduation rate in the state: 80.6% compared with the Healthy People 2020 (HP2020) goal of 82.4%.

In creating the Danville Index we first looked closely at Virginia Department of Education data for Danville, Virginia, and surrounding counties in the Southside Region as identified by the Council on Virginia’s Future.<sup>1</sup> The review compared the data from the following school districts:

Danville	Brunswick
Greensville*	Lunenburg
Martinsville	Halifax
Henry	Southampton
Mecklenburg	Prince Edward
Nottoway	Patrick
Charlotte	Pittsylvania

\*Covers Greensville County and the City of Emporia

To get a better understanding of what factors may be impacting on-time graduation rates in the area, we examined 10 variables identified through literature reviews and combined these into a single index—the Danville Index. The Danville Index captures some of the key socioeconomic, school climate, and environmental factors that may influence on-time graduation rate. These variables are:

- **Health Opportunity Index:** A broad examination of social, economic and environmental factors that affect health and well-being developed by VDH-OHE.
- **Student-teacher ratio:** The number of children in a classroom affects the learning that occurs; smaller class size often equates to higher achievement.
- **School safety:** Safe schools attract and retain teachers who can make a difference in students’ academic achievement.
- **Truancy (after seven absences):** Students with multiple truanies tend to have low academic achievement and a high dropout rate.
- **Special education:** Graduation rate for students with disabilities is 20 points behind students in the general population.
- **Chlamydia rate:** Although the Chlamydia rate may not be a direct predictor of low on-time graduation rate, it does inform policy makers about the student environment.
- **Teen birth rate:** Only about 50% of teen mothers receive a high school diploma by age 22.
- **% Children in poverty:** Children who spend a year or more in poverty account for 70% of all children who do not graduate from high school.

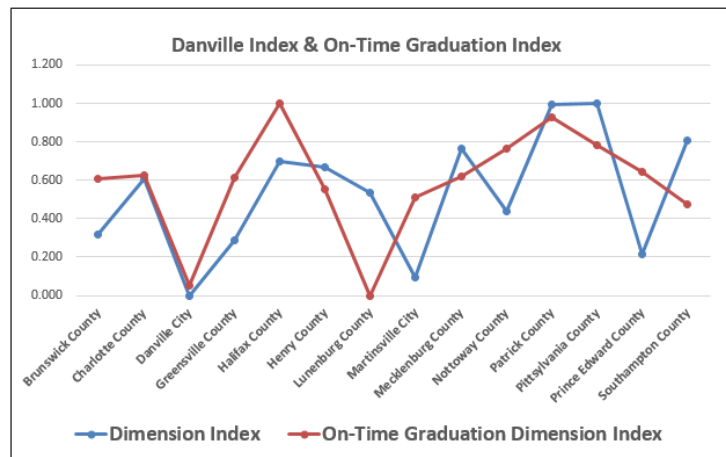
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<sup>1</sup> See Virginia Performs website: <http://vaperforms.virginia.gov/Regions/regionsMap.php>

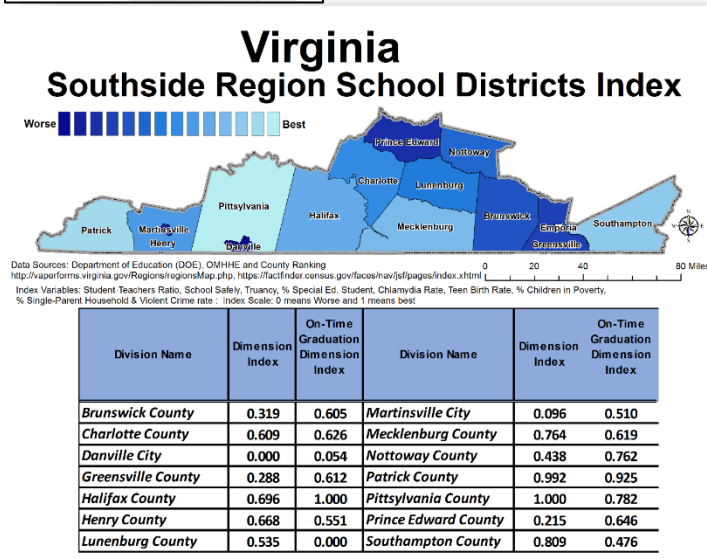
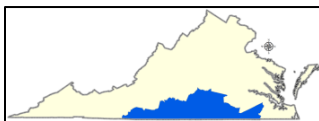
- **% Single-parent households:** Children living in single-parent households often have fewer economic resources than children in two-parent households.
- **Violent crime rates:** Children who observe crime and violence have a high probability to experience aggression, stress, and withdrawal, as well as delinquency and low school achievement.

## Conclusions

The relationship between the index (variables) and the on-time graduation index was 49%, meaning the indices told half of the story behind Danville's low on-time graduation rate. Danville ranked the second lowest in graduation rates (Improvement from last two years) and in the Danville Index. Significantly, the two independent cities and a county (Danville, Martinsville & Prince Edward County) ranked lowest in the Danville Index and tended to rank low among all the factors as well. Among these, the Greenville school district stood out as having 88.8% on-time graduation rate, matching some of the best performing districts in the region (8<sup>th</sup> position). This may stem from the fact the City of Emporia and Greenville County share a school district and schools.



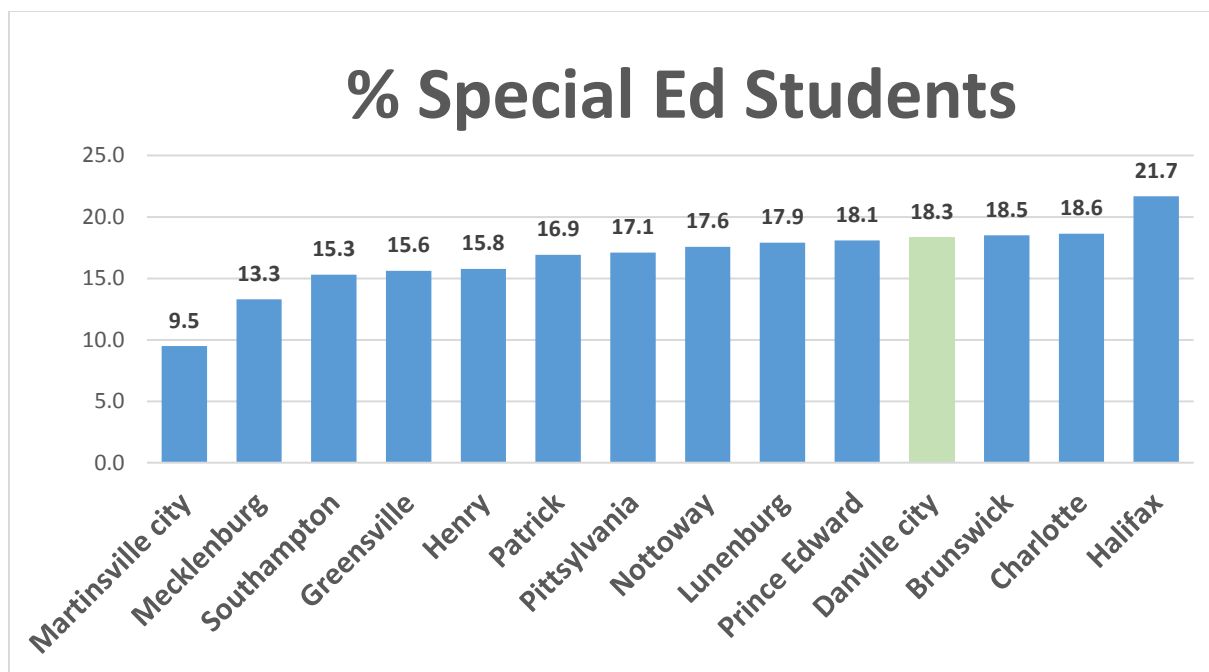
Danville ranked among the lowest three in 5 out of 10 factors examined, including being the highest in



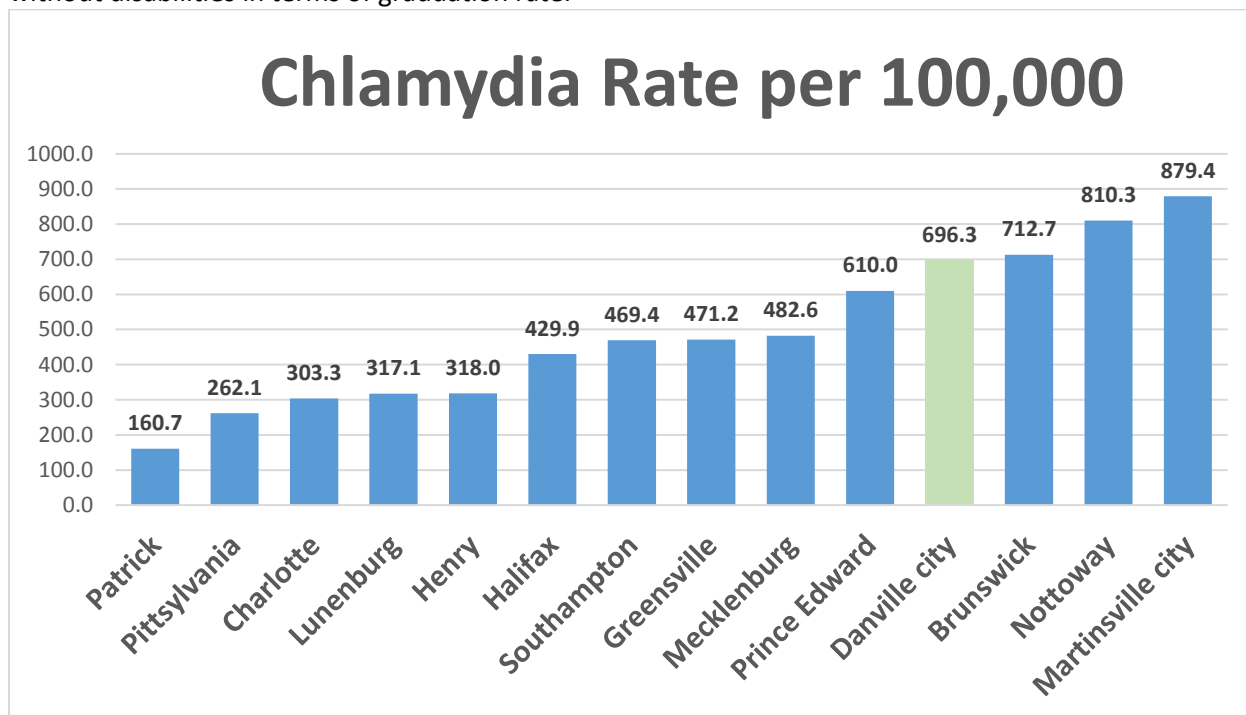
violent crime. Danville ranked near the middle in student-teacher ratio. This is an interesting but not unexpected outcome. Although Danville has a number of teachers in line with other districts, these teachers work in an environment more challenging to student achievement. VDH-OHE is working on a more comprehensive index that will gather data at the neighborhood level. This will help us to better describe the factors that impact student achievement in Danville and help policy-makers identify neighborhoods with high needs and the types of interventions that may benefit them the most.

## **Interpretation of Index:**

The Danville Index is a composite measure comprising 10 indicators that reflect a broad array of social determinants of health: **Student teacher Ratio, School Safety, % Truancy (after 7 absences), % Disabled students, Disease – Chlamydia Rate, Teen Birth Rate, % Children in Poverty, % Single-Parent Households, HOI and Violent Crime Rates.** The index is scaled based on the geometric mean of normalized indices for each of the 10 variables. It simplifies the comparison among the selected counties/cities in Southside by combining the ten variables into a single number. The index varies between 0 and 1 with the score close to zero indicating greater distance from the maximum to be achieved on the aggregate of the variables composing the index. However, a score close to 1 indicates greater achievement relative to the maximum attainable on the aggregate of the variables used in constructing the index.

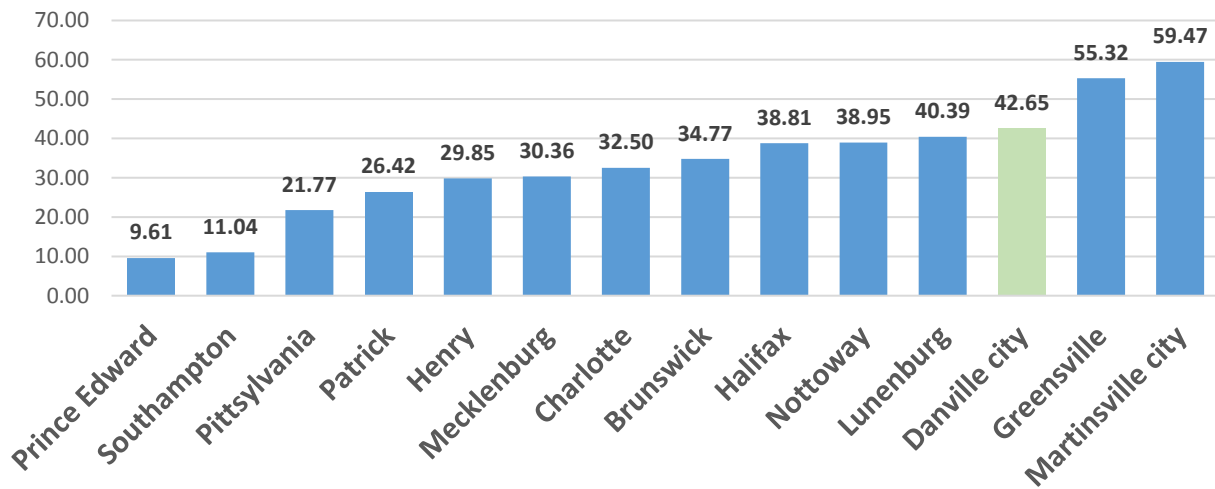


A report published by the Civic Enterprises (Johns Hopkins University) shows that even though graduation rate is climbing, there remains a huge disparity between persons with disabilities and those without disabilities in terms of graduation rate.



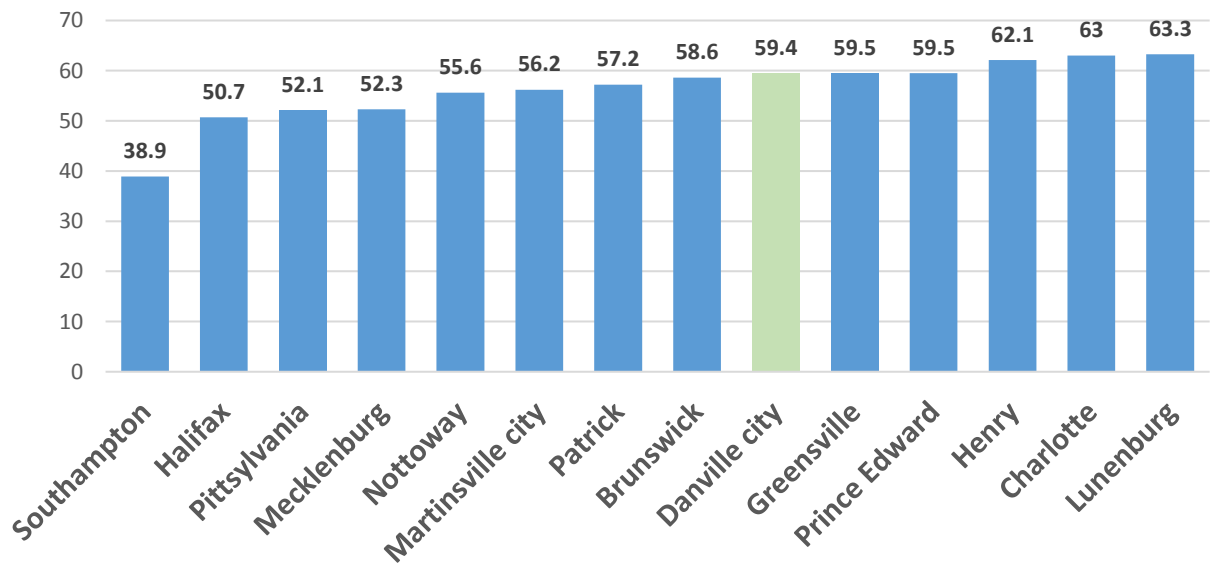
A Rand Corporation Study found that “early sexual activities show significant effects on high graduation and college enrollment”. We use Chlamydia rate as an environmental proxy for this factor. See Chang Phum. *High School Graduation Rates in the United States and the Impact of Adolescent Romance*. Pg. 87.

## Teen Birth Rate Rate per 1,000



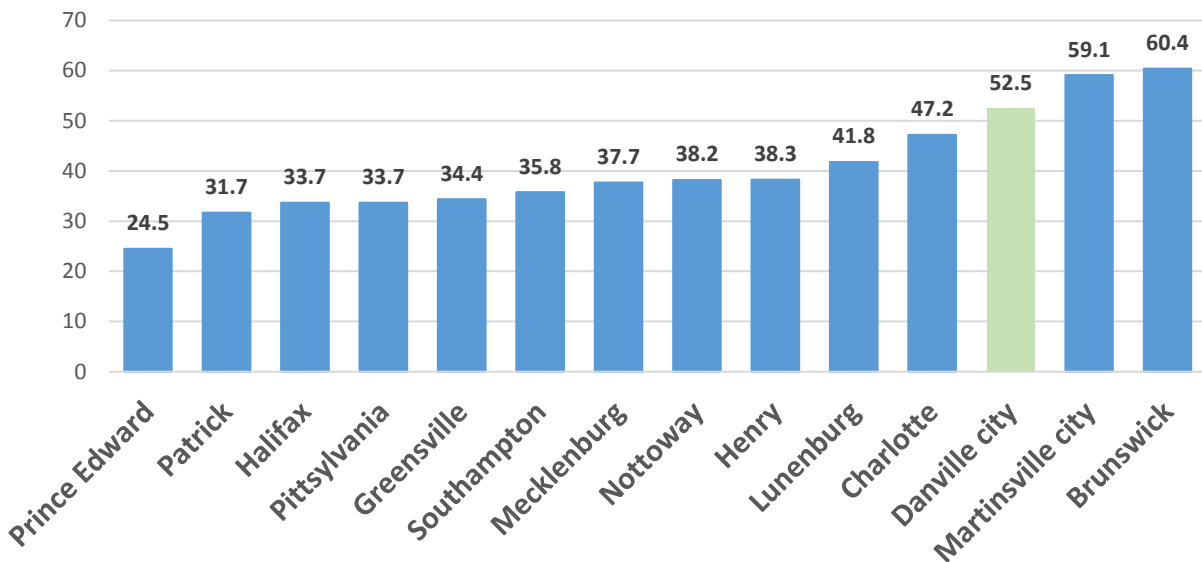
Pregnancy and birth are significant contributors to high school dropout rates among girls. Only about 50% of teen mothers receive a high school diploma by 22 years of age, versus approximately 90% of women who had not given birth during adolescence (Perper K, Peterson K, Manlove J. *Diploma Attainment Among Teen Mothers*. *Child Trends, Fact Sheet Publication #2010-01*: Washington, DC:Child Trends; 2010)

## % Children in Poverty



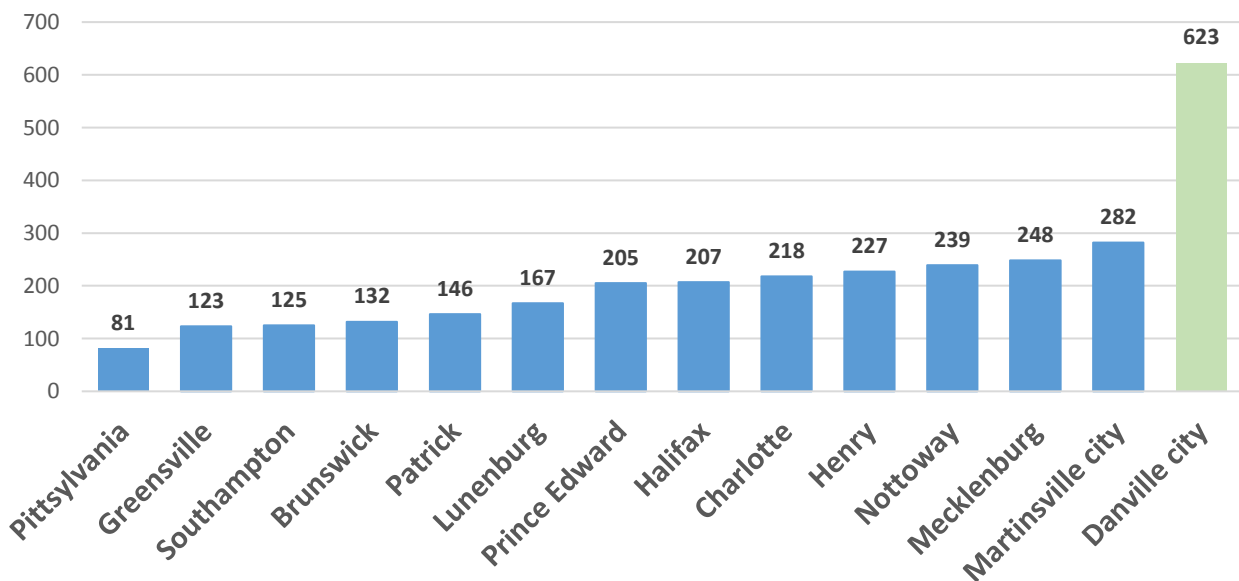
Children who spend a year or more in poverty account for 70% of all children who do not graduate from high school (Hernandez, Donald J., *Double Jeopardy: How Third-Grade Reading Skills and Poverty Influence High School Graduation*, Annie E. Casey Foundation, 2012)

## % Single-Parent Household

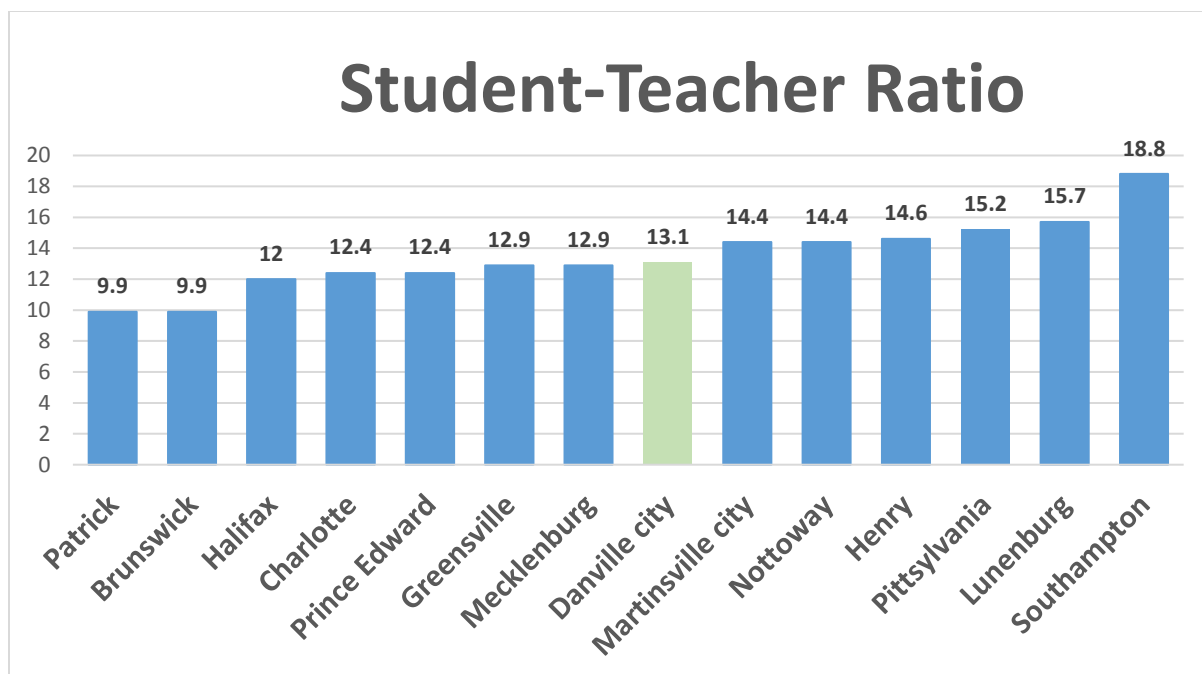


According to the Annie E. Casey Foundation, children living in single-parent households often have fewer economic resources than children in two-parent households.

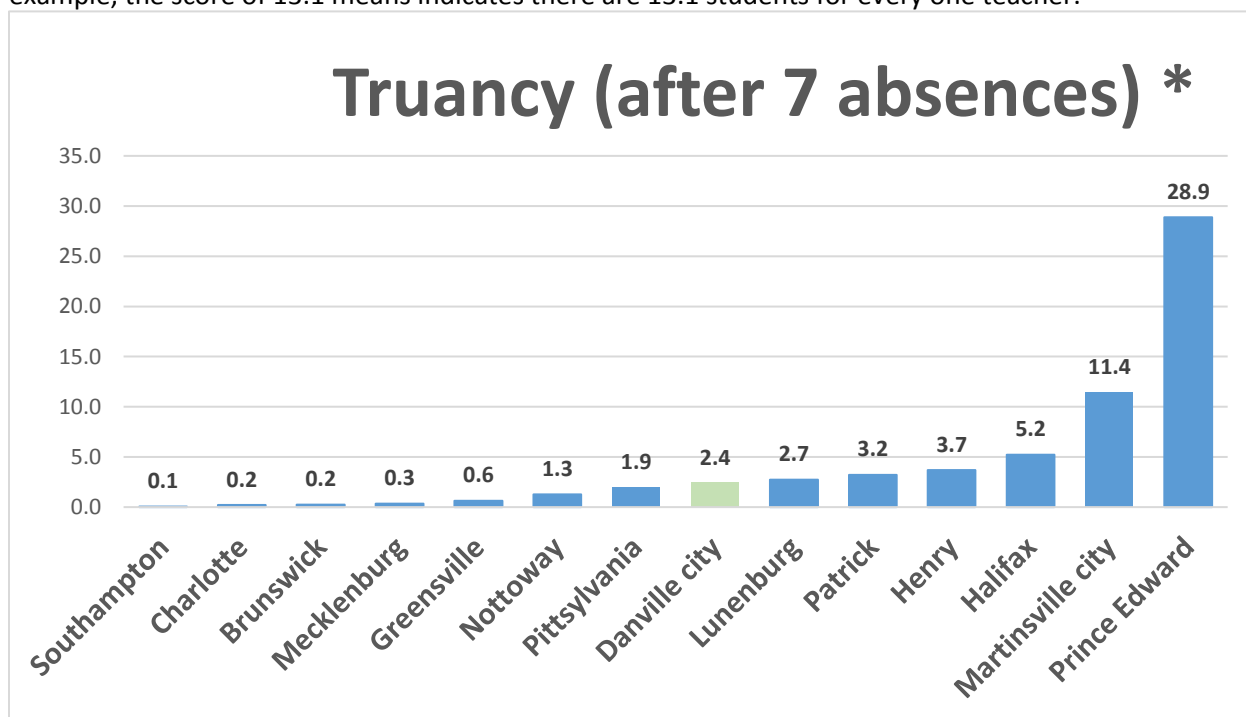
## Violent Crime Rate per 100,000



In a survey conducted by "Child Trends," the organization's website has documented that children who observe crime and violence in their environment have a high probability to experience social and emotional problems such as aggression, stress, and withdrawal, as well as delinquency and low school achievement.

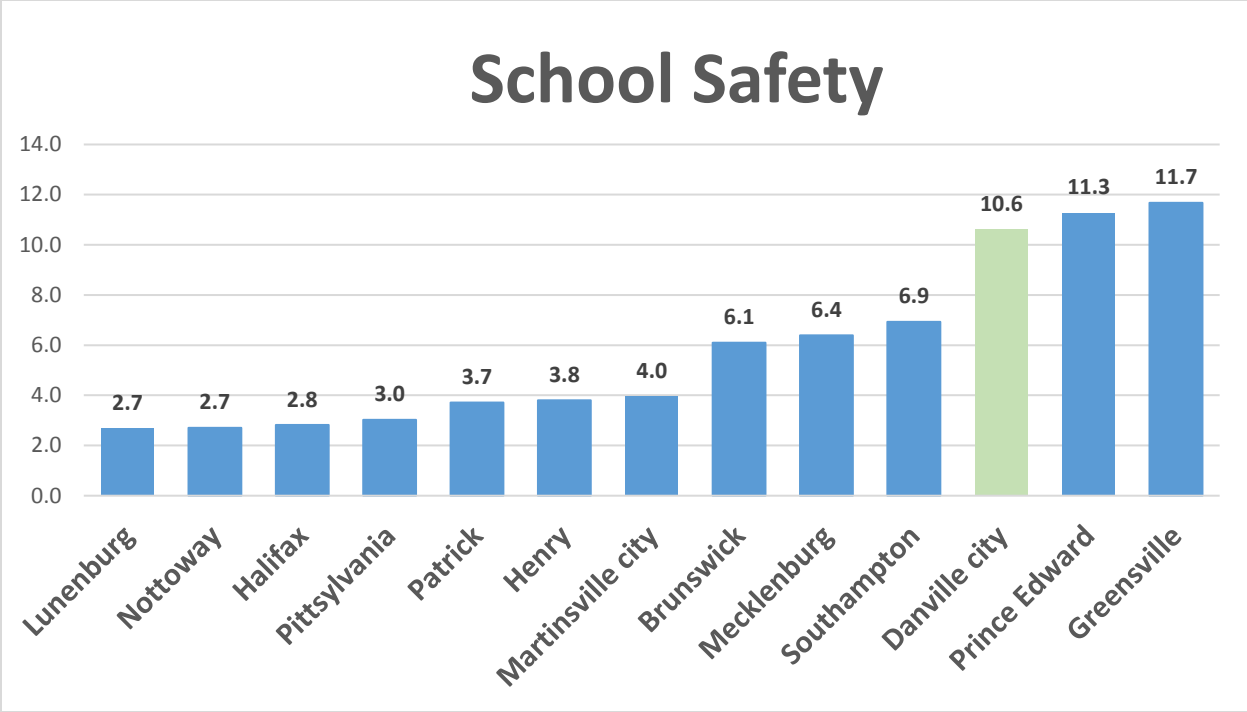


This indicator measures the human resources at the classroom level to help understand the interaction between students and teachers. This indicator is used as a surrogate measure for classroom size. For example, the score of 13.1 means indicates there are 13.1 students for every one teacher.

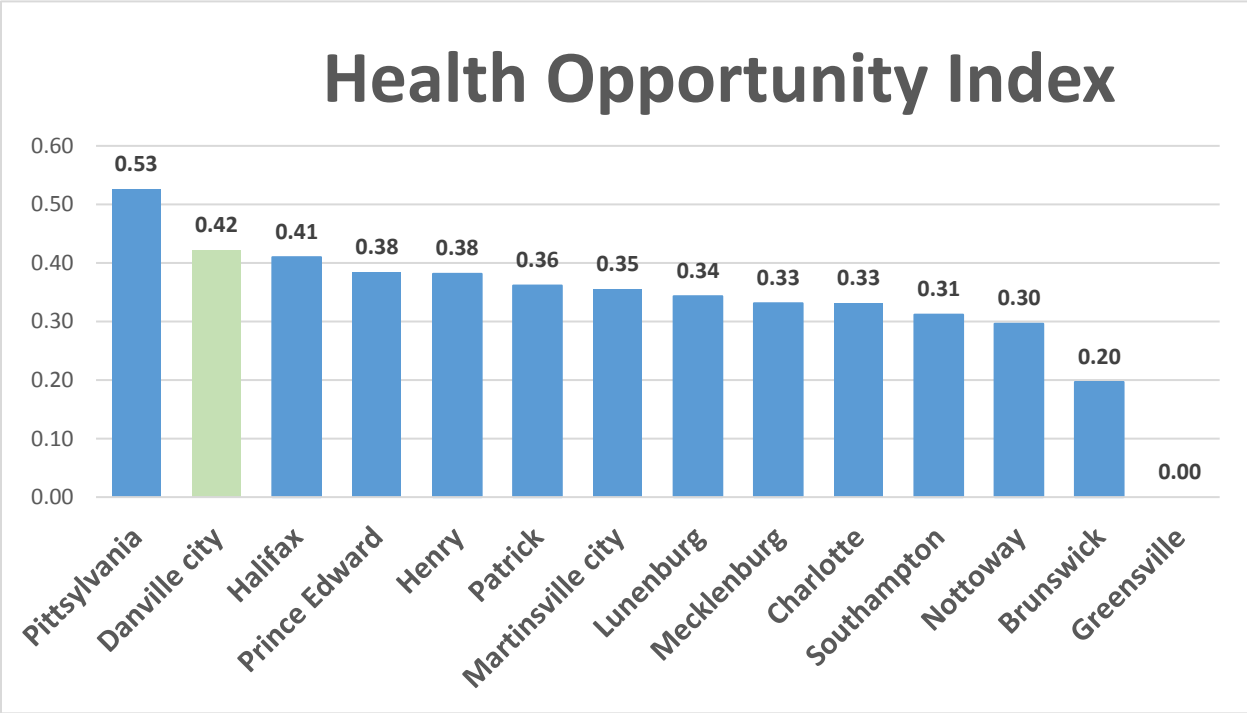


According to the Center for American Progress, students with high truancy rate tend to have low academic achievement and a high dropout rate:

\* No. of students with whom a conference was held after the student had accumulated seven absences during the 2017-2018 school year.



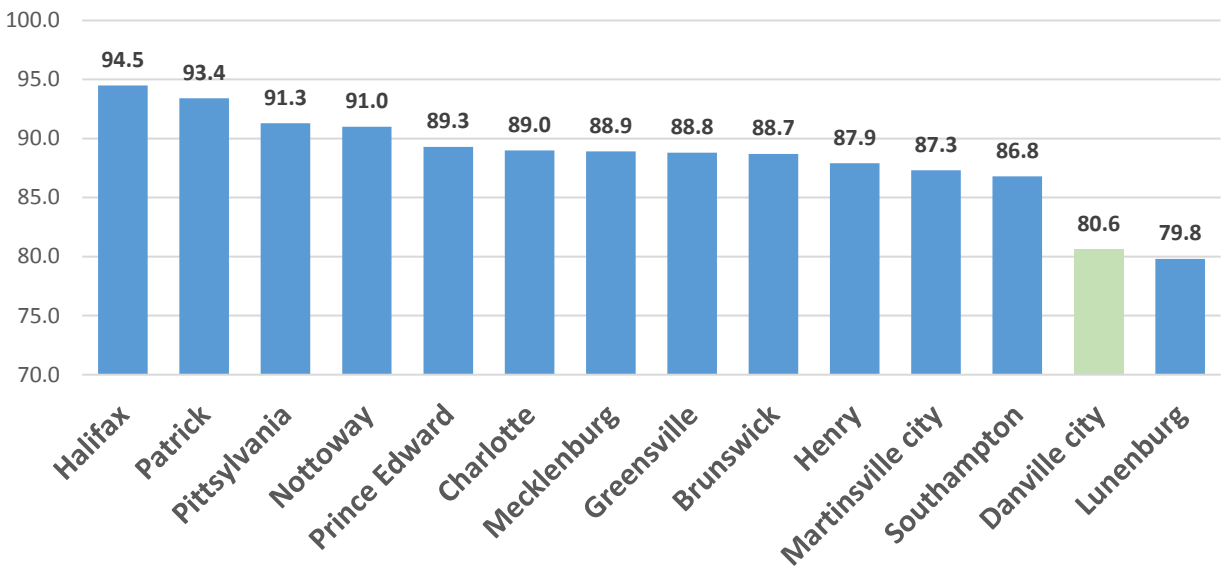
School safety and crime are often cited as barriers to student achievement. Our school safety measure counts the number of offenses against students, staff and other persons, and weapons offenses, per 100 students.



The Health Opportunity Index is a composite measure of the Social Determinants of Health—the social, economic, educational, demographic, and environmental factors that relate to a community’s well-being. It is comprised of 13 indicators that reflect a broad array of social, economic and environmental factors. Statewide scores range from 0.0 to 1.0.



## 4-Year On-Time Graduation Rate (%)



Graduation rates vary widely by school district in the Southside Region.

Division Name	YHELI Index	Graduation Dimensional Index	% Dropout
<i>Danville City</i>	0.000	0.054	8.9
<i>Martinsville City</i>	0.096	0.510	5.5
<i>Prince Edward County</i>	0.215	0.646	6.3
<i>Greensville County</i>	0.288	0.612	8.6
<i>Brunswick County</i>	0.319	0.605	4.5
<i>Nottoway County</i>	0.438	0.762	7.6
<i>Lunenburg County</i>	0.535	0.000	15.2
<i>Charlotte County</i>	0.609	0.626	7.4
<i>Henry County</i>	0.668	0.551	7.8
<i>Halifax County</i>	0.696	1.000	2.3
<i>Mecklenburg County</i>	0.764	0.619	4.8
<i>Southampton County</i>	0.809	0.476	7.9
<i>Patrick County</i>	0.992	0.925	4.6
<i>Pittsylvania County</i>	1.000	0.782	6.1

Data Sources: (2018)

<https://nces.ed.gov/ccd/schoolsearch/>

<https://p1pe.doe.virginia.gov/pti/>

[http://www.doe.virginia.gov/statistics\\_reports/index.shtml](http://www.doe.virginia.gov/statistics_reports/index.shtml)